

**SINGULATION METHODS AND SUBSTRATES
FOR USE WITH SAME**

Abstract of the Disclosure

5 A circuit board substrate assembly includes a generally planar circuit board
substrate material having a longitudinal axis extending along a length of the substrate
material between a first end and a second end thereof. The circuit board substrate
material further has a first edge and a second edge extending along the length of the
circuit board substrate material between the first end and the second end. A plurality of
10 openings are defined in the substrate material. Each opening extends between a first
distance from the first edge of the circuit board substrate and a second distance from the
second edge of the circuit board substrate. Further, each opening separates adjacent
circuit forming regions lying along the longitudinal axis and has first and second
opposing end portions. The first end portions of each opening lie along a first
15 singulation axis of the substrate material parallel to the longitudinal axis and the second
end portions of each opening lie along a second singulation axis of the substrate
material parallel to the longitudinal axis. Removing interconnect material along the first
singulation axis and second singulation axis provide for singulation of the circuit
forming regions and any circuits thereof.

20

EL776900706US

"EXPRESS MAIL" MAILING LABEL NUMBER: EL776900706US
DATE OF DEPOSIT 25 May 2001
25 I HEREBY CERTIFY THAT THIS PAPER OR FEE IS BEING DEPOSITED WITH THE
UNITED STATES POSTAL SERVICE "EXPRESS MAIL POST OFFICE TO ADDRESSEE"
SERVICE UNDER 37 CFR 1.10 ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO
THE ASSISTANT COMMISSIONER FOR PATENTS,
WASHINGTON, D.C. 20231

30 PRINTED NAME Jacquelyn K. Torborg
SIGNATURE Jacquelyn K. Torborg